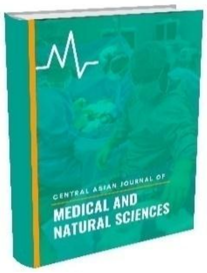
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Clinical Characteristics of Patients with Defects of Dentition and Hard Tissues of Teeth and with Inflammatory Periodontal Diseases

1. **Rajabov Otabek Asrorovich.**
2. **Asrorov Shukrullo Abdukholik Ugli**

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[1] Bukhara State Medical Institute Associate Professor of the Department of Orthopedic Dentistry and Orthodontics

Abstract: The article provides information on diagnostic analyzes of clinical and functional changes in the oral cavity when using metal-ceramic and zirconium prostheses. In the materials of the study, the results of orthopedic treatment of 180 patients (76 men and 104 women) aged 21 to 60 years were obtained. As a result of the study, it was concluded that the use of zirconium prostheses is an effective way to prevent the pathological effects of prostheses on the periodontium.

Key words: cermet, periodontal tissues, oral mucosa, zirconium prostheses.

Relevance. The degree of impact of the prosthesis on the tissues of the oral cavity depends on the quality of the prosthesis, the physico-chemical composition of the materials, the state of the periodontal and the general reactivity of the body. Recently, there has been a tendency to increase the number of patients who do not tolerate metal inserts in the oral cavity (removable and non-removable prostheses) [1,3,5,7,9,10].

The relevance of this problem is determined by the fact that the pathological effect of metal inclusions can be eliminated only by removing them from the oral cavity or replacing them with precious metal alloys [4,5,6,8,11].

One of the ways to increase the insensitivity of metal inclusions in the oral cavity is their galvano-electrolyte luster [2,6,7,8,10,11]. This method of increasing the biological inertia of prostheses in the oral cavity has not been studied enough. There is no data justifying the use of modern methods of electrolytic coating of metal-ceramic frames of prostheses (MCP) in periodontal pathology.

The question of the effect of the electrolytic gasket on the resistance of structural alloys to the accumulation of microorganisms of the oral cavity on their surface, i.e. on the hygienic condition of prostheses, remains unresolved. The listed little-studied issues of the actual clinical problem of the use of electrolytic coatings to increase the biological compatibility of structural materials of prostheses determined the purpose of the study.

The purpose of the study: to assess the effect of dentures on the activity of the oral cavity and gums.

Materials and methods of research. We conducted a study of 210 patients in the period from 2019 to 2021. Of these, 141 are women, which is 65.9%, and 73 are men - 34.1%, respectively. They were divided into groups, 1 (main), 2 (comparison) or 3 (control). In our study, the Kennedy classification was used to identify defects.

According to Kennedy , all defects of dentition are divided into 4 main classes:

I class. Bilateral unlimited defects.

Class II. One side is an unlimited defect.

III class. Limited defect in the side.

IV class. This class includes a limited defect in which the toothless area is located in front of the rest of the teeth and crosses the middle line of the jaw. We conducted hygienic indices to determine the condition of periodontal tissues. The oral cavity was evaluated according to objective and subjective criteria prior to comprehensive treatment to assess the condition of the dentition and defects of the hard tissues of the teeth, as well as in patients with VZP [13.15.17.19].

Results. As a result of our study, it was noted that the majority of orthopedic patients were patients with DST I - 31%, followed by patients with DTTD- 28%, patients with DST III - 18%, DST II - 15%. and DR IV - 6%. The smallest proportion was in the category of patients without teeth at all - **2% (Fig. 1).**

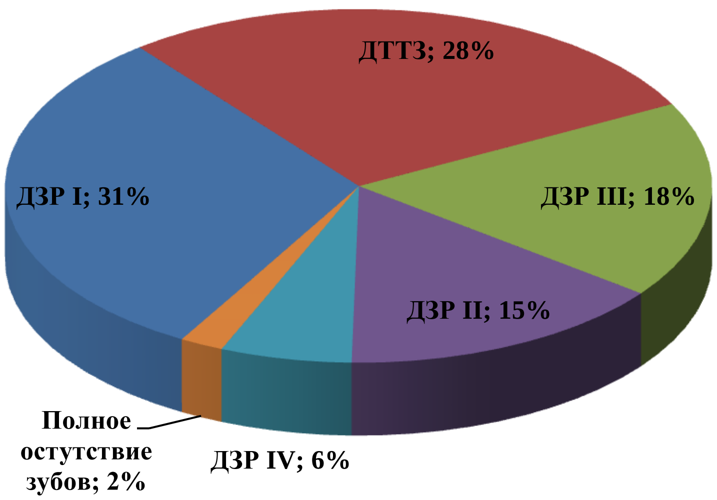


Figure 1. Prevalence of defects of dentition and hard tissues of teeth among patients seeking orthopedic care.

Gingivitis was detected in 30.4% (65 people), mild chronic periodontitis - 44.4% (95 people), moderate chronic periodontitis - 17.8% (38 people), severe chronic periodontitis - 7.4% of cases in patients with defects of dentition and hard tissues of teeth. The interrelationships of risk factors such as smoking, concomitant diseases, social conditions and harmful work, non-compliance with hygiene, overweight, improper prosthetics and the development of VZP in patients with defects of dentition and hard tissues are analyzed.

Risk factors in gingivitis patients included 25 cases of non-compliance with hygiene, 20 cases of incorrect choice of prosthesis and 17 cases of concomitant diseases, 12 cases of bad habits, living conditions, occupational injuries (9 cases) and overweight (3 cases). significantly outweigh such risk

factors as. Incorrect prosthetics and concomitant diseases were also among the risk factors in patients with CPLS, CPSS, and CPT [12.14.16.18].

We analyzed the relationship of periodontal diseases with defects of dentition and hard tissues of teeth, determined the influence of various risk factors on the development of VZP, which is not only an exact defect of the dentition and hard tissues of teeth, but also the periodontal status of VZP, risk factors for development and transition can be taken into account when planning orthopedic structures.

Table-1. Index score of periodontal disease treatment

Hygienic indexes	1-group	2-group
Index gigieny polosty RTA (uprošenny) Grina-Vermillon (Green JC, Vermillion JK, 1964) OHI-S	2,2±0,17*	2,2±0,10*
Hygienic Efficiency Index of PHP (Podshadley, Haley, 1968)	1,6±0,15	1,5±0,15
Index of dental care on approximal surfaces API (Lange, 1977)	71,3%	63,3%
Periodontal indices		
Papillary-marginal-alveolar index of PMA (I.Schour,M. Massler, 1947, Ragmamodification, 1960)	58,5%*	57,5*
CPITN Index (WHO, 1989)	2,66±0,25	2,7±0,16
Cowell (Cowell I., 1975) Molleman Bleeding Index (H.R.Myhleman, 1971) PBI in modification	1,9±0,6	1,6±0,15

Note: * - statistically significant differences between the groups ($p<0.05$).

The oral cavity was evaluated according to objective and subjective criteria prior to comprehensive treatment to assess the condition of the dentition and defects of the hard tissues of the teeth, as well as in patients with VZP.

When studying subjective and objective criteria in relation to the oral cavity, we found that before complex treatment, 92% of patients had discomfort, 4.3% had a feeling of pain, 4.1% had bad breath, 6.5% had dryness, 3.0% had stomalgia, 44.6% had a change in the color of the mucous membrane oral cavity (SOPR), in 9.7% - traces of teeth, in 4.9% - erosion and wounds (Fig. 2).

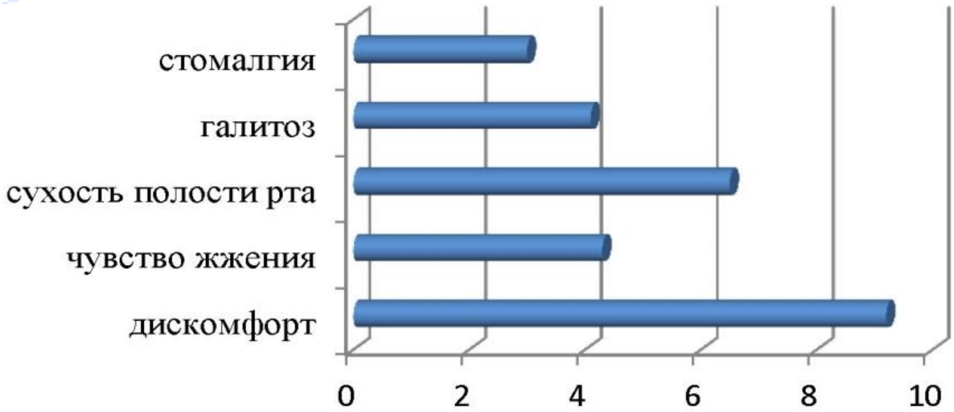


Figure 2. The structure of subjective criteria in the oral cavity in patients with defects of the dentition and hard tissues of the teeth, as well as inflammatory periodontal diseases, %.

Among the subjective criteria were noted: stomalgia in 10 cases before complex treatment, in 2 cases after complex treatment; bad breath: before complex treatment - 8, after complex treatment - 2 cases, dry mouth: before complex treatment - 12, after complex treatment - not noted; feeling of irritability:

in 14 cases before complex treatment, in 2 cases after complex treatment; discomfort: 24 cases before complex treatment, 3 cases after complex treatment.

Among the objective criteria were observed: traces of teeth on the mucous membrane of the cheek or tongue - before complex treatment in 18 cases, after complex treatment in 6 cases; erosion, wounds in the oral cavity: in 10 cases before complex treatment, after complex treatment was not observed; discoloration of the oral mucosa: before complex treatment in 118 cases, after complex treatment in 22 cases, depending on the structural materials used in prosthetics, changes in the condition of tissues and organs of the oral cavity of patients after orthopedic treatment with non-removable metal-ceramic prostheses were also analyzed [17.19].

In patients with prostheses with metal-ceramic structures, 34 subjective and 28 objective criteria for the clinical condition of the oral cavity were noted before the start of complex treatment, and 2 objective criteria after complex treatment, no subjective criteria were observed after complex treatment. In patients with non-removable zirconium prostheses, 10 subjective and 11 objective criteria for the clinical condition of the oral cavity were noted before the start of complex treatment, and 1 objective criterion after complex treatment, no subjective criteria were observed after complex treatment.

In patients with braces and cast prostheses with titanium coating, 46 subjective and 137 objective criteria for the clinical condition of tissues and organs of the oral cavity were noted before the start of complex treatment, and after treatment - 4 subjective and 11 objective criteria (Table 2).

Таблица-2. PREVALENCE OF DISEASES OF THE ORAL MUCOSA

Orthopedic constructions	**Metal-ceramic cue constructions**		**Zircon dioxide structures**		**bridges with titanium coating**	
Principles of oral health	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Dentistry	5	1	2	-	3	1
Halitosis	6	1	1	-	5	1
Dry mouth	9	-	1	-	12	-
Burning sensation	5	1	2	-	7	1
Discomfort	9	1	4	-	19	2
teeth marks	12	1	3	1	25	1
Erosion, wound	4	-	3	-	14	-
Changing the color	12	1	5	-	98	3

Conclusion. Thus, complex treatment with the use of metal ceramics was carried out in 92.7% according to subjective and objective criteria of the negative oral cavity, in 94.6% of patients with zirconium dioxide prostheses, on orthopedic structures made of bridges with titanium coating and cast bridges in 88.2%. The use of metal-ceramic prostheses made of cobalt-chromium alloy coated with zirconium dioxide does not lead to a reliable manifestation of pathological periodontal changes.

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